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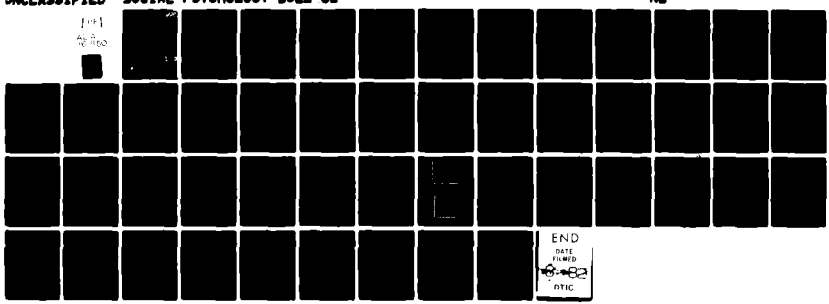

ACCESSING INFORMATION IN MEMORY-BASED IMPRESSION JUDGMENTS: INCONGRUITY VS NEGATIVITY IN RETRIEVAL SELECTIVITY

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The nature of selective cognitive search for information in memory-based person judgments is explored by examining an incongruity hypothesis and a negativity hypothesis. The incongruity hypothesis predicts that people search memory for incongruent or disconfirming information; the negativity hypothesis posits that they selectively search for negative information. Two studies are reported that use decision time to determine the types of information subjects search for in making occupation suitability judgments. Although it has been

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shown that people weigh negative information more heavily when making overall impression evaluations, subject's retrieval strategies reflected a search for disconfirming, rather than negative, information. The preferential search for disconfirming evidence, however, was found to depend on the ability to functionally encode the potential congruity of descriptive information at the time the information was first encountered.

Accessing Information in Memory-Based Impression Judgments: Incongruity vs. Negativity in Retrieval Selectivity

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Running Head: Incongruity and Negativity

Accessing Information in Memory-Based Impression Judgments: Incongruity vs Negativity in Retrieval Selectivity

Recent social cognition research has shifted focus from the study of information integration in stimulus - based judgments to the study of memory - based decisions. Stimulus - based judgments refer to those in which descriptive information is presented immediately before or simultaneously with a required judgment. However, many social judgments are based on information that has earlier been acquired and stored in memory. Thus, we may evaluatively describe to a friend someone we met recently or decide to hire someone based on memory of a job interview. Such judgments depend on how people organize, search, and access the cognitive representations they form about others. Although quite common, little is still known about how such judgments are made. Here we address two questions: (a) in what ways do people search memory for both facts and categorizations during memory - based impression judgments and (b) to what degree does information encoding determine the nature of such searches?

A number of recent studies have shown that people rely heavily on memory for previous judgments and categorizations, rather than factual stimuli, as the basis for memory - based decisions about others (cf., Higgins, Rholes, & Jones, 1977; Lingle & Ostrom, 1979; Lingle, Geva, Ostrom, Leippe, & Baumgardner, 1979). Lingle & Ostrom (1979), however, also obtained evidence that subjects supplement their memory for a previous judgment with a search for negative (or disqualifying) factual information. Such a selective information search seemed plausible in light of literature indicating that people weigh negative information more heavily and find it more diagnostic than positive information (e.g., Birnbaum, 1974; Fiske, 1980; Kanouse & Hanson, 1972; Ostrom & Davis, 1979; Wyer, 1973).

Lingle and Ostrom's (1979) negativity finding is best explained in reference to their methodology. This involved having subjects make memory - based occupation - suitability judgments about stimulus persons described by varying numbers of positive or negative traits. When descriptive information was uniformly positive, subjects' decision times increased as set size (i.e., the number of descriptive traits) increased; with negative traits, however, there was a tendency for decision times to decrease as set size increased. This could be accounted for by a search for negative information as follows: The larger the number of positive information items, the longer subjects need to complete a search for negative traits regardless of whether they make a representative search (e.g., 75% of stored text) or a self - terminating search (e.g., stop when sufficient negative items are retrieved). A decrease in decision time over increasingly large negative trait sets follows from the assumption that larger negative sets *are more* likely to contain a disqualifying attribute (averaging over people and occupations) than are smaller sets.

Two Explanations: Negativity and Incongruity

While Lingle and Ostrom's (1979) data are consistent with a negativity hypothesis, only positively phrased questions were employed (i.e., "Would this person be successful at occupation x?"). Consequently, the resultant effect may have been due to subjects selectively searching memory for incongruent evidence (i.e., evidence disconfirming the hypothesis conveyed by the question) rather than for negative information per se. Lingle and Ostrom (1979) suggest this in noting that negative traits would effectively "disqualify" persons from being judged a success in the occupations.

Conceptually, the negativity and incongruity hypotheses differ in their posited relationship between information that will be searched in memory during

a decision and the particular judgment that must be made. The negativity hypothesis suggests that the relationships between set size, trait set valence, and decision time obtained by Lingle and Ostrom should hold regardless of the judgment question; the incongruity hypothesis views such results as dependent on the judgment questions. If a judgment task were to involve negatively phrased questions (i.e., "Would this person be a failure at occupation x?"), the incongruity hypothesis, in contrast to the negativity hypothesis, would predict that judgment times should increase for increasing amounts of negative information while decreasing for increasing amounts of positive information.

The two selectivity hypotheses not only imply differences according to how judgment questions are phrased, but also differ regarding the possible importance of knowing what kind of question will be asked at the point information is encoded. People may only engage in selective memory searches when the basis for selectivity is known at encoding. That is, they may need to tag information according to the basis of selectivity (incongruity or negativity) at the point it is initially received and placed in memory. Since negativity is a stimulus characteristic, "positive" and "negative" tags can easily be assigned regardless of the question to be asked. Tags of "congruent" and "incongruent", however, can only be assigned if a subject is aware of which question phrasing (success or failure) must be responded to. Consequently, whereas negativity can operate regardless of such foreknowledge, incongruity may be restricted to situations in which the type of judgment to be made is known.

Two experiments were conducted to test the incongruity and negativity retrieval hypothesis. Subjects were asked to make both positively and negatively phrased occupational judgments about stimulus persons described by varying numbers of positive or negative traits. Decision time was then examined to

determine its consistency with negativity and incongruity retrieval processes. To investigate the importance of encoding, in some cases subjects knew how judgments would be phrased prior to seeing a person description, while in other cases they did not.

Experiment 1

Due to their interest in subjects' use of an initial judgment as the basis for additional decisions, Lingle and Ostrom (1979) had their subjects make pairs of occupational judgments. Here, Experiment 1 focused on subjects' search for stimulus information so only single judgments were used. To make the judgments memory - based, person descriptions were removed prior to having subjects make their occupational judgment. Decision type (success or failure) was varied between-subjects with half of the subjects making success judgments and half making failure judgments. Valence of the trait set (all positive or negative) and set size (1, 3, 5, 7) were varied within-subjects.

Method

Subjects. Subjects were 18 male and 14 female undergraduates from Ohio State University who participated in partial fulfillment of an introductory psychology course requirement. All were randomly assigned to conditions.

Procedure. Subjects were seated in front of a Gerbrands (model T-3B-1C) tachistoscope used to present stimuli. They were told the topic of the research was how people make impression judgments based on limited information. Their task was to role play a personnel manager and make occupational - suitability judgments about potential employees.

It was explained that to begin each trial a stimulus person would be described by one of four set sizes. These traits were shown for 20 seconds during which the subject was to form an impression. Following a three-second

pause an occupational question appeared. For half of the subjects this asked, "Would this person be very successful as a (occupation)?"; for the other half it asked, "Would this person be a failure as a (occupation)?". Subjects responsed by pushing one of two levers labeled "yes" and "no". This blanked the screen and a ten-second rest followed before the next trial began. Decision time was measured by a Hunter Klockounter (Model A) from the moment a question appeared to the pressing of a response lever. Prior to beginning, subjects undertook four practice trials that included persons described by each of the four set sizes. All subjects were debriefed upon completing the experiment.

Design and Stimulus Materials. Four sets of 16 traits were selected from Anderson's (1968) trait adjective list to be used as stimuli. Two of these were positive (likeableness ratings of 374-345) while the other two were negative (likeableness ratings of 254-222). In constructing person descriptions the traits were counterbalanced using a cyclical replications procedure so that across subjects all traits appeared in all four set sizes equally often.[1]

Each subject judged 28 persons, 16 experimental, 8 foils, and 4 practice. On experimental trials, the persons were described by either all positive or all negative traits. On foil trials both positive and negative traits were intermixed. This prevented subjects from anticipating descriptions with only one type of trait. Foils appeared on trials, 1, 4, 6, 10, 13, 16, 18, & 22 and were not analyzed.

Approximately two-thirds of the judged occupations were taken from Lingle and Ostrom's (1979) list, while the rest were generated for this study. Occupations and trait descriptions in the 16 experimental trials were latin - square counterbalanced so that each occupation appeared equally often with the four set sizes for each of the four groups of stimulus traits.

For each subject the 16 experimental stimulus persons included eight described by positive and eight described by negative traits. The 16 subjects in each between-subjects condition (success vs failure question) received the same traits and occupations, with only the question differing.

Results

No participant indicated an awareness that their decisions were being timed, nor was anyone able to verbalize any part of the experimental hypothesis. An initial check indicated subjects' had appropriately considered the trait sets to be confirmatory and disconfirmatory. The proportion of affirmative responses was greater in the congruent conditions (where valence of the traits matched the valence of the judgment) as compared to the incongruent conditions (64% vs 22%, respectively).

Decision time data were analyzed in a 2 (type of question) X 2 (incongruity) X 4 (set size) mixed-design analysis of variance. The incongruity hypothesis would be confirmed if regardless of the type of judgment (success or failure), response time increased across set size for confirmatory trait sets but decreased for disconfirmatory or incongruent sets. In the present design this would produce a two-way interaction between incongruity and set size, but not a three-way interaction between these factors and type of judgment. The negativity hypothesis of an interaction between trait valence and set size, on the other hand, predicts that regardless of the type of judgment, as set size increases subjects should take increasingly longer to make a decision with positive descriptors as opposed to decreasing amounts of time with negative descriptors. This would produce an incongruity interaction for success but not for failure judgments. Consequently, in the present analysis the negativity effect predicts a three-way interaction between trait incongruity, set size, and

judgment type. For the purpose of presentation (see Tables 1 and 2), this three-way interaction will be relabled in its simpler form as an interaction between trait valence and set size (see Ostrom & Mitchel, Note 1 for an explanation for this reasoning).

As predicted by the incongruity hypothesis, the incongruity by set size interaction was significant, F (3, 90) = 5.47; $p < .005$, as was the interaction between incongruity and the set size linear component, F (1, 30) = 4.61; $p < .05$. Figure 1 shows that as predicted across set size mean decision times increased for congruent descriptive traits while decreasing for incongruent sets. There was also an unpredicted residual component to the interaction. Both the quadratic (F (1, 30) = 4.94, $p < .05$) and the cubic (F (1, 30) = 7.64, $p < .01$) components reached significance.

Insert Figure 1 and Table 1 about here

The interaction between trait valence and set size predicted by the negativity hypothesis was not significant, F (3, 90) = 2.20. Neither the linear or residual components proved individually significant, F (1, 30) = 3.05 and F (2, 60) = 1.24, respectively. Mean decision times as a function of trait valence and set size are displayed in Table 1.[2]

In addition to these effects there was a main effect for incongruity (F (1, 30) = 4.92; $p < .05$) with decision times being shorter in the incongruent condition as compared to the congruent condition (7.40 secs *vs* 8.15 secs, respectively). The main effect for negative *vs* positive trait sets was not significant (F (1,30) = 3.25).

Discussion

Experiment 1 supported the incongruity, but not the negativity, hypothesis. Across increasing set sizes, subjects took longer in reaching a

decision when the trait descriptors were congruent with the requested judgment while taking less time when the descriptors were judgment - incongruent. The absence of a three-way interaction with judgment - type showed this pattern to hold regardless of decision type.

There was one anomaly in the incongruity data. The incongruity interaction showed a discontinuity in the linear relationship between set sizes 3 and 5. It is possible, then,that a strict linear relationship may not always hold between the incongruity factor and set size. A conceivable reason for this concerns subjects' spontaneous tendencies to form and rely on categorizations of stimulus persons as the basis for decisions (cf., Altom & Lingle, Note 2; Lingle & Altom, Note 3; Posner & Snyder, 1975). If subjects' tendencies to categorize persons as generally competent (or incompetent) increases with set size and such categorizations allow subjects to make decisions more quickly, countervailing forces could be operating to produce the observed discontinuities in the data. Set size would affect both the time subjects need to search for incongruent stimulus items as well as the probability that they would form and use some categorization of the person as the basis for their judgment. Thus, when set size was small (i.e., one and three), subjects may not have generally categorized the stimulus persons. With such small information loads, they may simply have searched their memory for relevant stimuli when an occupation was presented. With larger sets (i.e., five and seven traits), subjects may have dealt with the information overload by spontaneously forming and using positive and negative categorizations of the persons as a partial basis for their decisions. If such were the case, it would mean that subjects selectively searched for incongruent information both when they had (set sizes five and seven) and had not (set sizes one and three) categorized the stimulus persons.

As discussed in the introduction, subjects' memory search for specific types of factual information may depend on information items being functionally encoded relevant to the criteria dimension. In the case of incongruity, this possibility can be tested by varying whether subjects have foreknowledge of the type of judgment they will have to make when they first encounter the person descriptions. In Experiment 1 all subjects had such foreknowledge since each participant received only one type of question. If a search for incongruent information depends on encoding traits as such, randomly intermixing judgments so subjects cannot tell whether they will have to respond to a "success" or "failure" question should eliminate the incongruity effect. On the other hand, if subjects engage in a negativity search it should emerge independent of their foreknowledge of the judgment since stimulus attributes such as valence are independent of occupational decisions. These ideas were tested in Experiment 2 by manipulating subjects' foreknowledge of the judgment they would have to make. The experiment was also used to test the incongruity and negativity hypotheses within a multiple judgment task more similar to the one originally employed by Lingle and Ostrom (1979).

Experiment 2

Subject's ability to functionally encode stimuli as incongruent with a judgment was manipulated within - subjects by having all participants make success and failure judgments in both a blocked and intermixed fashion. This accomplished two things. First, it provided the opportunity to test the encoding - dependency of the incongruity effect within a single experiment; second, it made it possible to examine the fluidity of subjects' decision processes by seeing whether they would alter an established memory - search strategy when confronted with a changing stimuli encoding opportunity.

Experiment 2 used a multiple - judgment task similar to that of Lingle and Ostrom (1979). Those researches employed initial occupational judgments that were both similar and dissimilar to the second target judgments. However, it was decided for Experiment 2 to make all of the occupations within a pair similar. First, this represented the most stringent test of the incongruity effect. If subjects could be shown to search for incongruent factual information even when they had highly relevant previous categorization upon which to base a decision, the phenomenon would likely generalize to situations in which less relevant categorizations were available. The second reason for using similar occupational pairs concerned the significant residual component of the incongruity by set size interaction of Experiment 1. If this residual - component interaction was the result of counteracting categorization and factual search processes, having subjects make initial judgments highly relevant to their second decisions should assure relevant categorization for all set sizes, thereby minimizing variability in one of these processes. With categorization held constant, only factual information search should vary across set size, producing a simple linear effect.

Method

Subjects. Subjects were 18 male and 14 female undergraduates from Ohio State University who participated to fulfill an introductory psychology course requirement. Participants were randomly assigned to conditions.

Procedure. Stimulus materials were presented on a Gerbrands tachistoscope (model T-3B-1C). All subjects participated in two phases. In one they made 24 blocked occupational decisions that were either all success or all failure judgments; in the other they made 24 intermixed success and failure judgments (12 of each). For half of the subjects the blocked judgments came first while

the sequence was reversed for the other half.

Sixteen subjects began with blocked judgments. They were instructed that they would first see an occupation for which they were to consider the suitability of a stimulus person described by 1, 2, 5, or 7 adjectives. Thus, subjects knew the initial occupation to be judged before learning about the person, similar to Lingle and Ostrom's (1979). After viewing the traits for 20 seconds, subjects were presented with the question again as a signal to make their response. For half, the question asked if the person would be a complete success in the occupation; for the other half it asked whether the person would be a total failure.[3] As soon as subjects responded a second question appeared asking if the same person would be a complete success (total failure) in a second occupation. Once subjects responded, the display went blank while the experimenter loaded the stimulus cards for the next trial (a task taking approximately 5 secs). Subjects were told before beginning the blocked judgments what type of decision they would have to make (all success or failure) and engaged in four practice trials.

After 24 judgments (16 experimental and 8 foil trials), subjects learned that the experimental procedure was to be altered to intermix success and failure judgments for 24 additional trials. Subjects completed four success and four failure practice trials before beginning. First and second judgments were always of the same type (i.e., success - success or failure - failure).

A second group of 16 subjects were given the same instructions except that the order of blocked and intermixed judgments was reversed with the first 24 trials being a mixture of success and failure judgments while the remaining 24 trials were either all success or all failure judgments. Only decision times for subjects' second judgments were obtained, measured from the moment the

second question appeared to a subject's pressing of a response lever. All participants were debriefed at the experiments end.

Design and Stimulus Materials. The stimulus traits used in Experiment 2 were identical to those used in Experiment 1 except for 32 additional traits selected for the eight practice trials. Since one purpose of Experiment 2 was to see if the incongruity hypothesis would hold even when subjects had a relevant categorization upon which to base a decision (i.e., a first judgment), all occupation pairs were chosen to be similar. Approximately two-thirds of these came from Lingle and Ostrom (1979) while the remainder were freshly generated. To prevent subjects from expecting only similar pairs, foil and practice trials included some dissimilar pairs.

Whether subjects made more success or more failure judgments (as a result of their blocked phase) was one between - subjects factor. A second was the order of the blocked and intermixed judgment phases. The third such factor was the counterbalancing of person descriptions and judgment type. For 16 subjects, half of the occupation pairs were paired with success judgments and half with failure judgments; for a second group of 16 this pairing was reversed.

The same positive and negative traits were used in both experiment phases. However, the trait groupings were changed in each by using two distinct cyclical replications for each subject.[1] Subjects in the blocked - judgments - first condition received cyclical replications 1 through 8 in the first phase and 9 through 16 in the second. This was reversed for the blocked - judgments - second subjects.

In each half of the experiment eight foil trials were intermingled among the experimental trials whose descriptions had positive and negative traits combined. Half of the foils in the intermixed phase had success (or failure)

for the first question and the reverse for the second.

Results

Subjects' affirmative responses in the blocked and intermixed phases were greater for congruent than incongruent descriptions (59% vs 20% and 54% vs 20%, respectively) indicating the incongruity manipulation's success.

For the intermixed - judgment phase of the experiment all factors were within - subjects while for the blocked phase judgment type was a between - subjects factor. This made it impossible to combine the full set of data into a single ANOVA to test the negativity and incongruity hypotheses. Consequently, data from the blocked (between - subjects) phase were analyzed separately from the intermixed (within - subjects) phase. In both cases a 2 (judgment type) X 2 (description valence) X 4 (set size) ANOVA was performed.

Negativity hypothesis. There was no support for the negativity hypothesis in either the blocked or intermixed phases of the experiment. The interactions between trait valence and set size were nonsignificant in both cases, F (3, 90) = 1.16 and F (3, 93) = 2.41 respectively. The linear and residual components of the negativity interaction were also non-significant in the blocked phase, F (1, 30) = 1.62 and F (2, 60) $<$ 1.0, respectively. In the intermixed phase, the theoretically crucial linear component was again not significant, F (1, 31) $<$ 1.0., although the residual component was, F (2, 62) = 3.29; $p < .05$. As this last effect had not been observed in any of the previous studies (including Lingle & Ostrom, 1979), no interpretation was attempted. Considering the full set of analyses, then, there was no statistically reliable support for the negativity hypothesis. Furthermore, inspection of subjects' mean decision times in Table 2 shows no trends in favor of negativity.

Incongruity hypothesis. Examination of the incongruity interaction

produced no support for such a memory search process in the intermixed - judgment phase where subjects did not know what type of decision they would have to make, F (3, 93)<1.0. The linear and residual components of that interation were also non-significant (both F's<1.0). The mean decision times (see Table 3) show no trends favoring incongruity as a basis of selective retrieval in the intermixed judgment phase.

Insert Tables 2 and 3 and Figure 2 about here

Support was found for an incongruity memory search process in the blocked phase of Experiment 2 where subjects had foreknowledge of the decision type. Although, the overall interaction between incongruity and set size fell short of significance (F (3, 90) = 1.76), the crucial linear component of the interaction was significant, F (1, 30) = 5.53, p<.05. The residual component of this interaction was not significant, F (2, 60)<1.0.

The incongruity by set size linear interaction for the blocked judgments is displayed in Figure 2. Although the relative shape is as expected, there is an inconsistency. For incongruent information, decision time showed the predicted linear decrease across set size. For congruent trait sets, however, in contrast to previous studies (including Lingle & Ostrom, 1979) there was no tendency for decision time to increase over set size. This pattern produced a significant set - size main effect for the blocked judgments (F (3, 90) = 2.82; p<.05), with decision time decreasing overall as set size increased (F (1, 30) = 10.71; p<.005 for the linear component and F (2, 60) = 1.0 for the residual). This anomaly is considered in the discussion section below.

Cognitive flexibility. All subjects engaged in both the blocked and intermixed judgment tasks. Half received them in one order and half in the other. The results of the study showed that on an overall basis subjects used a

selective retrieval strategy in the blocked, but not the intermixed phase. The factor of task order was included to determine whether the cognitive strategy subjects developed in the first task would carry over into the second. There was no evidence of such cognitive fixedness, however. Judgment order did not interact with the negativity or incongruity linear interactions for either the blocked or intermixed analyses (all p values $> .20$).

Discussion

Results from Experiment 2 support and extend those of Experiment 1. First, they help rule out any possibility of a negativity effect. Despite an abundance of evidence indicating people weigh negative information more heavily than positive information in stimulus - based judgments, no support for negativity in retrieval selectivity emerged here. Of course, there is no reason to expect that the processes involved in stimulus - based and memory - based judgments should necessarily coincide. Second, results of Experiment 2 support the notion that subjects' memory search for incongruent information depends on foreknowledge of the type of judgment to be made. In the absence of the opportunity to encode information as potentially incongruent, the interaction between judgment/description incongruity and set size disappeared.[4] Third, the results illustrate subjects' decision - making flexibility. Changes in judgment foreknowledge altered the way in which subjects encoded and searched information in memory.

The principal procedural difference between Experiment 1 and the blocked condition of Experiment 2 was that in the latter case subjects always made an initial relevant occupational judgment. It was thought providing subjects with relevant categorizations might lessen variability in the number of category - based decisions they made as set size changed. Consistent with this expectation,

the incongruity by set size interaction in Experiment 2 produced only a significant linear component as would be expected from subjects reviewing discrete items of descriptive information in memory. In contrast to Experiment 1, the higher order cubic component was not significant.

The one anomaly in Experiment 2 may also have resulted from the high percentage of relevant initial occupational judgments. This concerned the fact that while the interaction between incongruity and set size was consistent with earlier studies, there was no increase in decision time for congruent trait sets over set size. The high percentage of similar judgments in this study may have led subjects to expect that their second judgment would almost always be similar to their first. Such an expectation could influence the slope for congruent trait sets without similarly affecting the slope for incongruent sets. To understand how, it is necessary to consider the two criteria subjects must use when searching for incongruent traits: (a) the proportion of traits in a set needed to be recalled before concluding that a representative search of the factual information has been made and (b) the number of incongruent or disconfirming information items that need to be retrieved before reaching a negative decision. Changes in decision time over set size for congruent and incongruent information sets will be affected differently by changes in these separate criteria. Increases in decision time for increasing congruent trait sets result from subjects having to recall increasing numbers of items in order to make a representative search of the presented information. Any lowering of this representativeness criterion will tend to decrease the effect of set size on decision time. For example, for congruent set sizes of 1, 3, 5, and 7 if the criterion were 75%, subjects would have to recall 1, 3, 4, and 6 traits before surpassing it. For a 25% criterion, however, the number of traits needed to be

recalled would be 1, 1, 2, 2. In the first case a marked increase in decision time across set size could be expected; in the second little difference would likely occur. If the criterion actually changed as a function of set size (i.e., the greater the number of single - valenced traits, the lower the criterion level), a flat or possibly even a slightly descending curve could occur over set size for the congruent sets. Such a criterion change, however, would not be expected to affect decision times for incongruent sets. Increasing set size for incongruent descriptions would make it increasingly easy for subjects to recall disconfirming evidence regardless of the representativeness criterion they happen to be using, thereby resulting in decreased decision time.

Experiment 2 presented subjects with a much higher percent of relevant initial categorizations (100% of the experimental trials and 50% of the foil trials) than Experiment 1 (0%) or any of the earlier experiments conducted by Lingle and Ostrom (50%). This high percentage of similar judgment pairs may well have decreased subjects' belief in a need to extensively search the trait sets since their first judgments were almost always relevant to their second. Such a variable - search, two-stage decision model would be consistent with that recently proposed by Allen and Ebbesen (1981). As explained, this type of decrease in the representativeness criterion would primarily affect the slope over set size of the congruent, as opposed to incongruent, information sets.

General Discussion

Tulving (1979) has noted that throughout history memory research has typically been preoccupied with acquisition and retention of knowledge. It is only in the last decade that attention has turned to the activation and use of latent memory traces for subsequent judgments, choices, and decisions. In social cognition this focus has produced multiple demonstrations of people's

reliance on memory for categorizations or previous judgments as the bases for decisions. Indeed, that was the primary finding of Lingle and Ostrom (1979). As flexible information processors, however, people may also rely on memory for facts. Consequently, to better understand memory - based decisions we must learn more about how both types of memory structures are accessed under different judgment contingencies. Investigators have generally concluded that people typically search for confirmatory evidence at the neglect of disconfirming information (cf., Rothbart, Evans, & Fulero, 1979; Snyder & Cantor, 1979; Wason & Johnson-Laird, 1972). Consequently, an important feature of the present research is the conclusion that under appropriate judgment conditions people will, in fact, search memory for disconfirmatory evidence.

The reported studies effectively rule out the possibility that selective retrieval was a simple function of the positive or negative character of the stimulus traits. As a result, they also rule out as a basis for selectivity other static features of trait information that are associated with trait valence such as the weight and ambiguity of information items. That is, it was possible that the increase in decision time over set size for positive traits in the earlier work was due to positive traits being more ambiguous or receiving less weight than negative traits (Wyer, 1973). As a consequence, subjects might have had to retrieve more information items to reach a decision when given only positive (as compared to negative) traits. The absence of negativity effects in the present studies, however, casts a shadow over such an interpretation. It seems doubtful that such trait features would change from the "success" to "failure" judgment task or be affected by judgment foreknowledge.

Implication of proper encoding as a prerequisite for subjects' search for

incongruent information is consistent both with recent memory theorizing as well as speculation concerning the origins of the often-cited confirmatory bias. A number of memory theorists have noted the apparent importance for retrieval of a close overlap between retrieval cues and the set of context features cognitively represented during stimulus encoding (cf., Tulving, 1979; Tulving & Thomson, 1973). Tulving (1979) concludes, "...the compatibility relation between traces and cues that is all-important for successful recollection of the event is created at the time of study of the to - be - remembered material ... whatever compatibility exists between the cue and the to - be - remembered item otherwise is of no direct relevance (p. 413)". Such a position implies that the manner in which people search and retrieve memories will depend on the stimulus features that become salient to them and are encoded at the point the information is first encountered.

Consistent with this encoding proposition, both Rothbart, et al. (1979) And Wason and Johnson-Laird (1972) have speculated that the bias people show in various decision tasks towards considering primarily confirmatory evidence may result from their typically encoding events and stimuli as instances of concepts rather than as "non-instances". This suggests that in order to initiate searches for incongruent information one must structure a task to make disconfirmatory stimulus features salient at the time of their encoding. In the present research, foreknowledge of a judgment showed itself to be one important factor. Other features of the judgment task may have also been important and merit future investigation. Thus, the present person descriptions were for the most part very homogeneous, consisting of all positive or negative traits. Such homogeneity itself may have contributed to subjects searching for some means of differentiating among the persons and a consequent focus on potentially

disconfirmatory evidence when they knew what type of decision had to be made.

Incongruity as the basis of negativity effects. It is possible to view the present results as contrasting with the frequently reported finding that negative traits carry more weight than positive ones in stimulus - based judgments (cf., Wyer, 1973). It may be, however, that the contrast is more apparent than real, and that incongruity underlies previously reported negativity biases. The present research suggests that incongruent information has greater importance when people are aware of the judgment task at the time of receiving the stimulus information. This is certainly generally true of the stimulus - based studies in which negativity effects are observed.

One problem with invoking an incongruity explanation for negativity effects would be in determining what constitutes an "incongruent" information item. Although the problem does not arise when the scale of judgment ranges from "low favorability" to "high favorability" of impression, it is of concern when the judgment scale is bipolar (e.g., ranging from "like" to "dislike"). For the incongruity explanation to apply to such bipolar judgments, it must be assumed that people functionally regard the task as deciding whether or not a stimulus person is "likeable". Some evidence for such a presumption is inherent in research on the "Pollyanna Principle" (Matlin & Stang, 1978). However, verification of this prediction would require research in which the scale of judgment is systematically varied, as it was in the present studies.

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Footnotes

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[1]Cyclical replications consisted of randomnly ordering traits within each list from 1 to 16 and then sorting them into the four set sizes in 16 unique ways by moving the first trait to the end of the list and grouping the remaining traits in order into sets 1, 3, 5, and 7. For example, (1), (2,3,4), (5, 6, 7, 8, 9,), and (10, 11, 12, 13, 14, 15, 16) was the first group while (2), (3, 4, 5), (6, 7, 8, 9, 10,) and (11, 12, 13, 14, 15, 16, 1) was the second, and so forth.

[2]Although not significant, the data showed a general trend consistent with the negativity hypothesis. However, two additional studies not reported because of space limitations (but available from the authors) showed no trends towards negativity nor did the second study that is reported. In light of this accumulation of evidence against the negativity hypothesis, no significance is

attached to the data trends of Table 1.

[3]The expressions "complete" and "total" were added with the idea that increased question extremity might strengthen any retrieval selectivity effects.

[4]Besides producing no negativity effect, the two unreported studies referenced in footnote 2 also replicated Experiment 2 in showing no incongruity effect when subjects made intermixed success and failure occupational judgments.

Table 1

Mean occupational judgment time in seconds as a function of set size and trait valence: Experiment 1.

	Set size			
Description	1	3	5	7
Positive	6.96	8.72	8.24	8.46
Negative	8.27	7.51	7.29	6.73

Table 2

Mean judgment time in seconds as a function of set size and trait valence for blocked and intermixed decisions: Experiment 2.

Decision type	*Description valence*	Set size 1	3	5	7
Blocked					
	Positive	3.44	3.11	3.16	2.84
	Negative	3.18	3.23	3.00	2.99
Intermixed					
	Positive	3.10	3.43	2.86	3.20
	Negative	2.95	3.18	3.10	2.80

Table 3

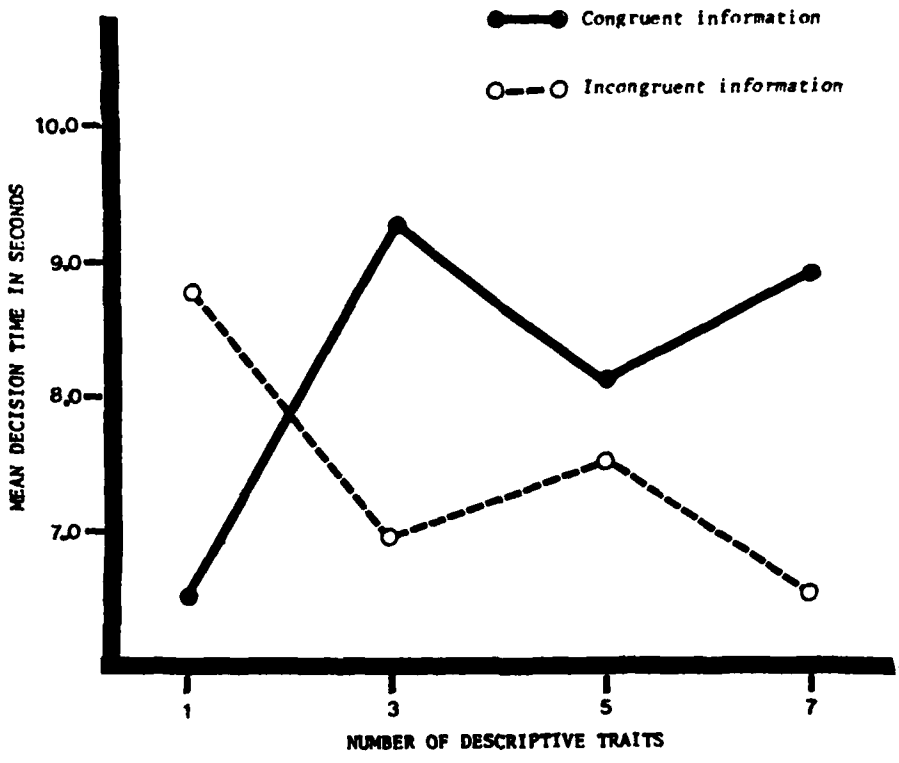
Mean judgment time in seconds as a function of set size and incongruity for intermixed decisions: Experiment 2.

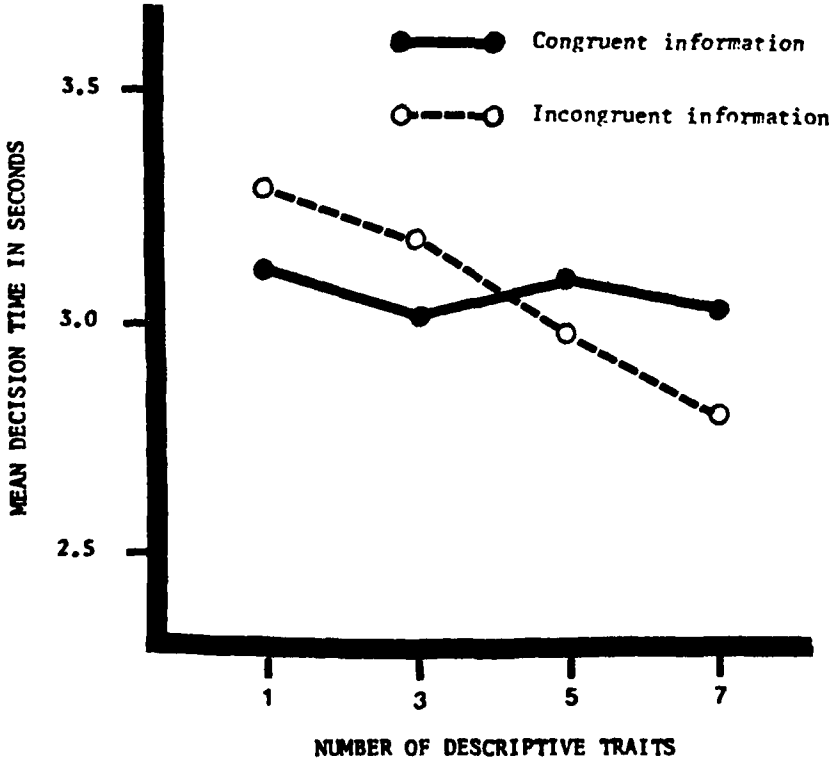
	Set size			
Description	1	3	5	7
Congruent	3.03	3.29	3.12	3.08
Incongruent	3.02	3.32	2.84	2.92

Figure Caption

Figure 1. Mean occupational judgment times for Experiment 1 as a function of incongruity and set size.

Figure 2. Mean occupational judgment times for the blocked phase of Experiment 2 as a function of incongruity and set size.


Congruent information
Incongruent information
10.0
9.0
8.0
7.0
MEAN DECISION TIME IN SECONDS
1
3
5
7
NUMBER OF DESCRIPTIVE TRAITS


Congruent information
Incongruent information
3.5
3.0
2.5
MEAN DECISION TIME IN SECONDS
1
3
5
7
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